We Claim:

1. A communications system for transferring signals from a wireless transmitter to a hub station, comprising:

a wireless transmitter configured to transmit a data signal using multiple sub-carriers;

a plurality of base stations each configured to receive the multiple sub-carrier data signal and relay the multiple sub-carrier data signal to a hub station;

a hub station configured to receive and combine the multiple sub-carrier data signals from the plurality of base stations.

2. The communications system of claim 1 wherein the hub station is configured to treat the signals received from the plurality of base stations as multipath components.

3. The communications system of claim 1 wherein the wireless transmitter uses an orthogonal frequency division modulation (OFDM) scheme to transmit portions of the data signal in parallel on multiple sub-carriers.

4. The communications system of claim 1 wherein the communications system is an electronic news gathering system, including a video camera and audio transducer coupled to the wireless transmitter, the wireless transmitter being configured to receive video and audio signals from the video camera and audio transducer for inclusion in the data signal.

5. The communications system of claim 1 wherein at least some of the base stations are connected to the hub station by wired communications links.

6. The communications system of claim 5 wherein the wireless communications links include an optical cable portion.

7. The communications system of claim 1 including a plurality of the wireless transmitters, each configured to transmit a data signal using multiple sub-carriers.

8. The communications system of claim 7 wherein at least some of the wireless transmitters transmit data signals substantially simultaneously, each using a unique set of sub-carriers.

9. The communications system of claim 8 wherein the wireless transmitters each include a receiver for receiving a reference signal to synchronize operation of the wireless transmitters.

10. The communications system of claim 9 wherein the reference signal receiver is a Global Positioning System (GPS) receiver.

11. The communications system of claim 7 wherein at least some of the wireless transmitters transmit data signals using the same sub-carriers in different time intervals.

12. A communications system for transferring information from a wireless transmitter to a hub station, comprising:

a plurality of wireless transmitters, each configured to transmit a data signal as successive OFDM symbols;

a plurality of base stations, each configured to receive OFDM symbols from the wireless transmitters located in a corresponding coverage area and relay the received OFDM symbols to a hub station, at least some of said base stations having overlapping coverage areas such that more than one base station can receive OFDM symbols from the same mobile transmitter;

a hub station configured to receive the OFDM symbols from the base stations and demodulate the OFDM symbols and output an estimate of the data signals from the wireless transmitters.

13. The communications system of claim 12 wherein the hub station is configured to combine signals received from the different base stations.

14. The communications system of claim 13 wherein the hub station is configured to sum the OFDM symbols received from the base stations prior to demodulating the OFDM symbols.

15. The communications system of claim 13 wherein at least some of the base stations are connected to the hub station by independent wired communications links having predetermined propagation delays, the hub station including buffering to substantially eliminate, prior to combining signals received on the communications links, any delay spread resulting from the predetermined propagations delays.

16. The communications system of claim 13 wherein the hub station is configured to adaptively combine the signals received from each of the base stations based on measured signals characteristics

17. The communications system of claim 12 wherein the wireless transmitters share a common communications channel, the wireless transmitters each being configured to receive a common reference signal to synchronize sharing of the channel.

18. The communications system of claim 17 wherein the common reference signal is a GPS signal.

19. The communications system of claim 12 wherein the wireless transmitters periodically transmit predetermined psuedo-random training symbols, the hub station being configured to determine, for at least some of the base stations, if the base station has received a transmission from the wireless transmitters by checking for the presence of the training symbols in signals received from the base station.

20. The communications system of claim 12 wherein the wireless transmitter each use a unique set of sub-carriers for transmitting the OFDM symbols.

21. A method for providing data signals, said method comprising:

(a) receiving at a plurality of base stations data signals transmitted from a mobile wireless transmitter using multiple sub-carriers, and relaying the data signals using multiple sub-carriers from the plurality of base stations to a hub station; and

(b) receiving and combining at the hub station the data signals from the plurality of base stations.

22. The method of claim 21 including outputting at the hub station, based on the combined data signals from the plurality of base stations, an estimate of the signals transmitted from the mobile wireless transmitter.

23. A receiver network for receiving from at least one wireless transmitter data signals that include successive OFDM symbols, comprising:

a plurality of spaced apart base stations configured to substantially simultaneously receive OFDM symbols from the at least one wireless transmitter and transmit the OFDM symbols to a hub station;

a hub station configured to receive and demodulate the OFDM symbols from the base stations.

24. The receiver network of claim 23 wherein the hub station is configured to perform a discrete Fourier transform on a sum of the OFDM symbols received from the base stations.

25. The receiver network of claim 23 wherein each of the base stations is connected to the hub station by a substantially independent communications link.

26. The receiver network of claim 25 wherein the communications links are wired links having predetermined propagation delays, and the receiver network includes buffering to reduce any delay spread resulting from differences in the propagations delays of the independent wired links.

27. The receiver network of claim 25 wherein the hub station is configured to perform a separate discrete Fourier transform on the OFDM symbols received from at least some of the different base stations, and combine the transformed symbols based on measured signal characteristics.

28. The receiver network of claim 27 wherein the hub station is configured to combine the transformed symbols based on noise characteristics of signals received from the independent wired links.

29. The receiver network of claim 27 wherein the wireless data signals include training symbols, the hub station being configured to determine which base stations have received a transmission from the wireless transmitter by checking for the presence of the training symbols in signals received from the base stations.

30. The receiver network of claim 29 wherein the training symbols are predetermined psuedo-random symbols.

31. The receiver network of claim 29 wherein the training symbols comprise OFDM symbols having predetermined characteristics distinguishable from OFDM symbols used to transmit useful data, the hub station being configured to determine the presence of the training symbols by determining if the signal power of sub-carriers associated with the at least one wireless transmitter exceed a threshold value.

32. The receiver network of claim 31 wherein the hub station is configured to reduce differences in propagation delays between the communications links by measuring time differences of training symbols detected on the communications links and buffering the symbols from the communications links based on the measured timing differences.